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CONTENTS

PAGE

What Pupil Activities Should Constitute the Curriculum in English? ---- 305
Franklin Bobbitt

The Present Status of the Law Relating to Certain School Matters 313
Carter V. Good

Teaching with Motion Pictures ---- 321
A. L. Young

A Public Summer School of Music for Musical Children ---- 327
Osbourne McConathy

An Analysis of Scores on the Illinois Examination ---- 332
L. H. Lanier

The High-School Science Library for 1925 ---- 340
H. A. Webb

A Map—London in the Age of Queen Anne
T. H. McMillan

Editorials ---- 348
Racking Heartstrings for Political Advantage
Kentucky Teachers Colleges

The New Books on Our Shelf ---- 350

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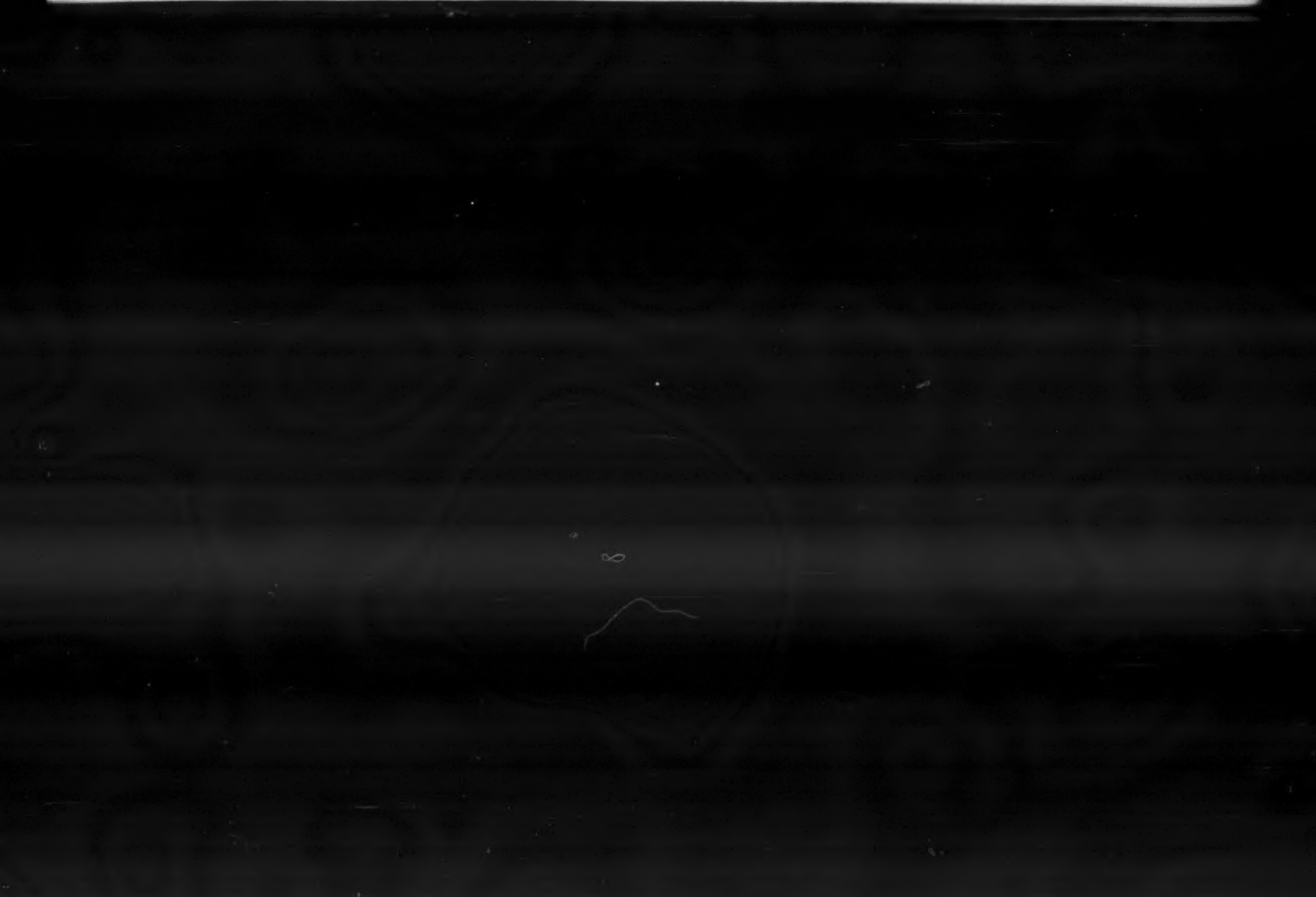

PEABODY JOURNAL
OF EDUCATION

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WHAT PUPIL ACTIVITIES SHOULD CONSTITUTE THE CURRICULUM IN ENGLISH?

FRANKLIN BOBBITT
University of Chicago

Quite against his will, the writer has been forced to become during recent years a lay teacher of English. In the conduct of graduate work he has been concerned with the theses of many candidates for advanced degrees. These persons were all graduates of high schools, and later of colleges of liberal arts, and were approaching the end of their professional courses. The length of their schooling was greater than that of ninety-nine per cent of the population. We have had a right to assume that they were educated in the things essential to the cultivated man.

Taken in the aggregate, the English of these theses has been rather disheartening. Rarely could one be accepted as originally submitted. In the case of about twenty-five per cent of them the errors in English were few and unimportant. In the middle fifty per cent of them the errors ranged from fairly numerous to quite numerous. The poorest twenty-five per cent were unbelievably bad.

Let us bear in mind that a thesis does not often lend itself to the niceties and subtleties of esthetic literary composition. All that we ask is a clear, straightforward presentation of the thought and correctness in what we may call the "mechanics" of the language. We expect sentences that will bear inspection, and a vocabulary that is selected with a view to expressing the exact idea intended. We expect correctness in grammar, punctuation, spelling, syllabication,

word compounding, abbreviations, numbers, italics, capitals, quotations, references, paragraphing, and the mechanical arrangement on the page. In the larger units of organization we ask only that the thought be presented in a clear and straightforward manner.

We ask for nothing more than good grammar-grade English. Our standards call for nothing better than what we have a right to expect from the best ten per cent of eighth-grade graduates. Yet the English of advanced students, in work submitted as finished, reaches this standard in the case of only a minority.

When a paper quite poor in English is submitted, the outstanding fact is the helplessness of the candidate. When we ask him to locate his errors and to eliminate them for himself, he appears to be relatively oblivious of his language and to have only the vaguest of ideas as to what is meant. He seems not to see the language clearly as an objective thing, and is consequently unable to recognize either its merits or its shortcomings. When we ask him to look at it, he acts as he would if we should ask him to look at the air or the ether or some other thing that he never saw. In other words:

1. He is relatively blind to matters of English. As a consequence,
2. He is uncritical of his English. As a further consequence,
3. He has no real desire to improve his English and to keep it improved, since he does not see wherein it is in need of improvement.

The deductions to be drawn are somewhat as follows:

1. For those who go through high school and college we should with certainty develop the *power to see* the English language *objectively*. Those who cannot attain this power lack intelligence which would justify collegiate training.

2. We should make each student who achieves the higher levels *critical* of his language and *watchful* against error.

3. We should awaken an impelling and continuing *desire* to use a good quality of English at all times and under all circumstances. This implies the development of an operating language conscience.

How are these things to be accomplished? Is it by doing better what we have long been doing? The facts prove the relative futility of what we have been doing. The English department in the high school has had the lion's share of the *required* work for a generation or two, and to that the college always adds its required portion. The results in the small proportion of students who reach the graduate level appear to indicate that the usual methods have not led to proficiency. Apparently there can no great risk in abandoning the unsuccessful methods and in experimenting with whatever promises improvement.

In searching for improved methods, let us note the fact that language activities are more or less continuous through all of one's waking hours. For ten or fifteen hours every day probably every person uses language in one manner or another. He uses it in three ways:

1. It is the instrument of most of his thought. As he thinks over his experiences, recalls the interesting incidents and conversations of the past, plans his activities for the future, nurses his grievances and his worries, and grapples with the problems with which he is hourly confronted, he scarcely thinks at all except as he uses language as the vehicle of the thought.

2. It is the instrument of the expression of his thought, whether this be oral or written.

3. It is the instrument that he uses in receiving thought from other individuals, whether oral or printed.

The character of his language is determined by these three kinds of experience which occupy him for many hours each day.

His schooling has little or no effect on the quality of his language except as it affects one or another of these three kinds of experience.

If the schooling is given as a matter of mere academic abstractions, without real reference or relation to his practice of English during the many hours of his daily use of it, then it is but a thing of irrelevance and futility.

The central problem of education in the use of English is to take in hand all of the pupil's language activities and see that they are guided into proper channels. It is the language life of the pupil which must be kept of good character at all times. Two hours a week given to English composition in the high school and college has in itself relatively little relation to the matter. It is the pupil's adherence to a hundred hours of good English every week that will develop that series of language habits which constitute his ability to use English.

Let us bear in mind that language is not primarily a thing to be taught; it is rather a thing to be used with care and watchfulness until it can be used well enough for one's general purposes. It is primarily a thing to be practiced, not a thing to be studied. This practice should be ten or fifteen hours a day, as one uses one's language for one's ordinary purposes. And this practice it is, and this alone, which really educates one in the use of the English language.

Because of the subtlety of language, and therefore the elusiveness of our educational problems, let me try to make my thought clear by the use of analogies, which I think to be reasonably accurate.

I have in mind a young man who became a carpenter. He was a high-school graduate of good average ability. In the high school he

had had enough manual training to be familiar with some of the tools, the materials, and the simpler processes; but he had never worked on the job. To achieve success in his calling, these are some of the things he did:

1. As an apprentice, he worked on the job eight hours a day and six days in the week.

2. He associated with skilled workmen, and thus lived, during all of his working hours, within an atmosphere of acceptable workmanship.

3. For the sake of success in his calling, he had a desire to acquire the necessary skills.

4. He observed the methods employed by skilled carpenters. These were to him the patterns for his own skill.

5. He was of a conscientious dispositon, and, therefore, always did his best. He lived up to the upper limit of his actual ability. He did not grow careless in his workmanship.

6. He did the jobs for himself. He did not wait for others to do them for him—not even for them to prod him into doing them.

7. He was constantly evaluating his degree of success in achieving skilled results. He noted where his work fell short of expectations. He gave special attention to see that it did not fall short in those matters a second time.

8. He got help from others in the evaluation of his results, and suggestions as to how to overcome any deficiencies that were noted.

9. The outstanding activity, which must never be lost sight of, was the subjective one of always *wishing* and *willing* to do the thing well, both for the immediate results and for the sake of achieving the skill necessary for his more remote objectives.

He became an excellent carpenter. In other words, he became thoroughly proficient in a certain field of complex action.

Now, to use one's mother tongue with skill is simply to become proficient in a different field of complex action. The fundamentals of the learning process are probably the same. Let us place the one over against the other:

1. The carpenter learns his trade on the job. There is no other place where it can be learned. In the same way, in mastering a language, it is to be learned on the job. It is to be learned by using it the best way one can use it wherever one is using it. And there is no other place where it can be learned.

2. The apprentice had a great desire to attain the necessary skills. In the same way, in the field of language, the apprentice must have a great desire to achieve facility and correctness in the use of his language. Until this desire is awakened, nothing really worth while in

the matter of training can be accomplished. This is a *sine qua non* of all education. And the desire must be in the *educatee,* not merely in the educator.

3. The apprentice workman sought in many ways to discover the patterns of good workmanship which should be employed. He carefully worked to the patterns. He was watchful against errors. He discovered mistakes and prevented a repetition of them. The successful apprentice in the field of language must likewise be diligent in searching out the patterns of good linguistic behavior and in holding to those patterns. He must be watchful against deficiencies of performance.

In these matters it must be noted that the apprentice, whether in the simple trade of the carpenter or in the complex field of language, *must depend on himself* for his vision of the patterns, for his guidance of his activities, for his watchfulness and evaluation of the degree of success achieved, and for a constant, vigorous, and effective prevention of correction of errors. His education, in the main, must be self-effort, impelled by his desire to succeed. He cannot be mainly dependent upon foremen, teachers, schools, or any outside directive agency. The apprentice in either case needs to associate with those who provide the mature example. Ofttimes he needs information which they can give, and the help of their advice, suggestion, and sometimes direction. These are, however, but auxiliary matters to assist him in the one main thing of self-direction of his labors. The moment he relaxes and relies on others to do his watching for him, his thinking for him, his desiring for him, to uphold the standards for him, and to drive him to effort, that moment his education ceases. No person can educate any other person. Ofttimes a more mature person can provide large assistance. But it is only *assistance.* At bottom one becomes educated only as one educates oneself. When our profession has mastered this one fact, and when we have developed a technique which takes full cognizance of this one fact, then we shall be on the high road to an education about one hundred per cent more efficient than that of the present.

Let me change the analogy. I have in mind another young man, who joined a college fraternity. He was a freshman from a village where his social advantages had been limited. He was pretty uncertain of himself, but very anxious to live up to social expectations. He himself wanted social education; and as a consequence, he made surprising speed in accomplishing his social education. And how did he do it?

1. To begin with, *he* did it, not somebody else for him. He did not

wait for some one to do it for him, or to assign it and drive him to it. He wanted it, and so he sought it for himself.

2. He observed the behavior of the more mature members of his organization, with the wish to achieve the approved types of behavior.

3. He listened to the conversation and advice of the more mature members, always wishing to achieve the levels they had achieved.

4. He consciously imitated the patterns which he observed, always wishing to make his performance the equal of the patterns.

5. With such attitudes of mind, with wish and will impelling and propelling him in the direction of the examples provided, naturally he unconsciously imitated the expected conventional behavior.

6. He greatly desired; and as a consequence, he greatly tried. He watched his every step. He thought before he acted and eliminated mistakes before they were made. He sought so to act that guidance and suggestions from his associates would never be necessary. He was managing his own education in this matter—under conditions provided by them.

What he was doing was learning conventional social behavior in a perfectly normal way, and fundamentally in the only way in which it can ever be learned.

Now, language is just as completely as this a kind of conventional social behavior; and in fundamentals it is to be learned in exactly the same way. In each case the learning comes from desiring—greatly desiring; from purposing, without ever any slackening of one's purposes; from observing the patterns and wishing to attain them; from working to the patterns of oneself, always wishing to attain them; from being so anxious to succeed that one feels one must depend upon himself and upon his own efforts, and not upon teachers; from anticipating errors and eliminating them before they are made; from noting actual errors and preventing repetition of them; from doing it all as a part of life itself, and not as a part of academic procedure.

Over against this method of learning on the job, where learning *can* be made effective, let us contrast the usual academic method. If the young man of our illustration had tried to master the matters of conventional behavior in a purely academic way, he would have acted about as follows:

1. He would have listened to lectures on social behavior under conditions where the type of behavior being discussed was impossible. The lectures would have been given by some learned gentleman who did not really care how the young man acted after he left the classroom, by one who was to the young man a social outsider, and to whom he was not at all socially responsive. He would have remained entirely cold to the expectations of the lecturer.

2. He would probably have covered certain assigned readings touching upon the topics of the lectures. The readings would have been abstract and would have had no particular relation to his current day-by-day desires and problems.

3. There might have been some classroom discussion of the problems of social behavior under the leadership of the indifferent professional outsider. The matters discussed would rarely have been related to his current day-by-day activities, and then but remotely.

4. After all of the talk and reading, he would have taken the regurgitative type of examination, in which he would have returned his knowledge of the useless and irrelevant facts which he had, for no reason which he could see, placed in mental cold storage.

5. The young man would not have been seeing the objectives of the class work in terms of his own personal behavior. If he should have seen such relationships, they would have been vague, general, and ineffective.

6. He would have been passive, letting the school do the thing for him. He would not have been filled with impelling desires—doing his best, watchful against mistakes at all times, following the patterns to the best of his ability, and otherwise doing the thing for himself.

Although too brief to be adequate, we think this is a fair characterization of the way the academic method would altogether prove its futility—and its absurdity. There is certainly little resemblance in the two methods, in either the spirit or the details.

Now, in the mastery of one's mother tongue, the familiar academic method is probably equally fantastic and futile. It omits the vital factors involved in learning the thing on the job.

Our practical conclusions are somewhat as follows:

1. Let us first, above all things, find the influences to which children and youths are responsive and which can be used in awakening and maintaining their desires to perfect their English.

2. Let us then utilize these influences in awakening a potent desire for good English, at all times, in those who are to be trained. When this is done, more than half of the teaching job is accomplished. From that point onward the apprentice in English can largely find his own way, and he can find his help when he meets the places where he needs help.

3. Let us organize the conditions of normal living by each child or youth so as to provide abundant opportunities for practicing his English under conditions where he greatly desires to use it with precision and effectiveness. In other words, while in the main one must educate oneself in English, those who are assisting in guiding the processes

should provide very many of the opportunities and stimulations which will enable him to do it.

4. We must let the pupil himself set the standards at which he will aim. The standards for him *must* be those which he sets up in his *desires*. We may wish they were higher. We may try further to awaken his desires and thus bring him to elevate his standards. But we cannot elevate them for him. We cannot impose standards upon him. It is his own desires which fix the only standards at which he will actually aim. We cannot compel the *will*.

5. Let us depend upon and utilize this mainly self-directed use of language for ten or fifteen hours per day as the one and only thing which will accomplish his training. Let us expect other things to be of service only as they assist him in these many hours of daily practice in correct usage.

THE PRESENT STATUS OF THE LAW RELATING TO CERTAIN SCHOOL MATTERS[1]

CARTER V. GOOD
Miami University

This paper endeavors to set forth the present status of the law, as laid down by court decisions, on seven matters of importance to the public schools. The paper will appear in three sections, in this and two subsequent numbers of the PEABODY JOURNAL. The topics treated and the sections into which they fall are indicated in the following outline:

I. I. *The Binding Force of School Board Regulations on the Board Itself.*
   II. *Delegation of the Contractual Power of the School Board.*
   III. *The Recovery of Funds Illegally Expended.*
II. I. *The School Rights of a Non-Resident Taxpayer.*
   II. *The Disposal of School Property.*
III. I. *The Forfeiture Because of Marriage of a Female Teacher's Contract.*
   II. *The Exclusion of Pupils Because of Non-Vaccination and the Enforcement of the Compulsory Attendance Law.*

I

THE BINDING FORCE OF SCHOOL-BOARD REGULATIONS ON THE BOARD ITSELF

In what appears to be the only case[2] of its kind on record, the courts were called upon to decide the extent to which a board is bound by its own rules and regulations. The gist of the ruling is given in the following sentences:

Rules and regulations adopted and promulgated by the board of education under Act of June 20, 1906, empowering them to appoint the teachers on recommendation of the superintendent of schools, have the effect and force of law, unless in conflict with express stat-

[1]In connection with this paper, the reader may be interested to refer to a former article on the theme, "The Legal Rights of School Authorities Regarding Admission and Expulsion of Pupils," by J. Eli Allen, which was published in the PEABODY JOURNAL, Vol. 2, No. 4 (pp. 175-189), January, 1925.

[2]United States ex rel. Denny v. Callahan, 294 Fed. 992 (1924).

utory provisions, and are binding on the board of education in the matter of appointing and promoting teachers.

It, therefore, appears that if relator came first on the list on May 21, 1922, and a vacancy existed by reason of the granting of leave of absence to Otelia Cromwell, and relator held first place on the list until after the institution of this suit, she must prevail. Indeed, this is concluded by counsel for respondents. Where relator's name was first on the list of eligible teachers, and she had applied for a vacancy and brought mandamus to compel her appointment, *held* that the board of education could not thereafter prejudice her rights by merging the rating of those already on the list with those who took a more recent examination, dating this examination back to the date of her examination. Under its rules, the board of education of the District of Columbia *held* without any discretion in the appointment of the teacher whose name is at the head of the eligible list.

The logic of the ruling was that a board might exercise the power of appointment in any reasonable manner it might deem proper to adopt; yet if it adopted and promulgated certain rules and regulations, such rules have the force and effect of law, unless there are express statutory provisions which conflict. The board could not "abrogate its own rules to meet the exigencies of a single case, and certainly not to the detriment of a right which had accrued."

There is an older case,[3] which does not have a direct bearing on the above decision, but which may throw some light on the problem. Under the laws of the Greater New York charter it was held that the board of education cannot place on an eligible list with the holder of a Grade A license on February 1, 1898, other persons as candidates for promotion who, although considered to have obtained a rating which has led the board of education to include them also in such list, have not a Grade A license. Adding to such list the names of persons who had not held a Grade A license was held a violation of the charter section.

The court reasoned that a holder of a Grade A license was prejudiced by the adding to the list of persons eligible for promotion the names of persons who had not held such a license, or by the promotion of one not the holder of such a license. There was, however, nothing unconstitutional in discriminating between teachers who received the Grade A license prior to 1898 and those who received the same license later, since this would be merely a discrimination between classes of employees.

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[3] Fitzpatrick v. Board of Education of City of New York, 124 N. Y. S. 765 (1910).

The board may cause separate lists of men and women teachers to be prepared as eligible lists for use in the exercise of its discretionary power in the appointment to a given position of either a male or female teacher, and the board has a wide discretion in determining whether a given position shall be filled by a man or woman. A man with a lower-grade certificate, if there are no men available with the desired certificate, may be selected in preference to women with the desired grade of certificate, if such seems necessary according to the discretionary powers of the board. It is recognized that certain types of positions may require either a man or woman according to the exigencies of the situation, and the matter is left to the discretion of the board.

The situation in the New York case was not, however, like that in the Washington case. The New York board was breaking no rules of its own and was merely required to live up to the provisions of the city charter laws. The New York board could prepare separate lists of men and women, but within the class its own rules for promotion and advancement of teachers would have to be obeyed by the board itself. It is improbable that any court would allow a board to set aside its own rules to meet the exigencies of a single situation or to favor a particular individual. Such a procedure would be to discriminate within a class and would violate the principle of uniformity. This does not mean, however, that the board cannot repeal its own rules, since such action would result in a uniform treatment of all those in a given class and would effect no discrimination.

II

DELEGATION OF THE CONTRACTUAL POWER OF THE SCHOOL BOARD

The courts are practically agreed that the board must act as a corporate body at a regular meeting, and that duties cannot be delegated and left to the discretion of individual members. In transacting business, a quorum must be present, and the president and secretary may not take upon themselves discretion in matters which should be decided by the board as a corporate body. Numerous cases agree in setting forth such a ruling.

West Virginia[4] holds that though members of a board of education, acting otherwise than in a meeting duly convened, cannot make a contract binding on the board in its corporate capacity, they may by negotiation determine the elements of a contract to be made by the board, acceptance of which, in meeting, will bind it.

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[4]Rudman v. Bd. of Ed., 114 S. E. 268.

Where a person is exercising illegally delegated power, it is presumed that all persons who deal with school officers have knowledge of the extent of their powers.[5] According to such a holding, there would be no recourse for a person who claims that in making a contract he was not aware that the officer in question was exercising an illegally delegated power. Of course, if services were rendered and used, compensation on the *quantum meruit* basis would be possible in most cases.

Arkansas[6] holds that duties imposed on school boards composed of a number of persons cannot be discharged by a part of the members of the board; nor can a contract be made by a part of the members unless at a regular meeting or one called after notice is given. The rules applicable to a board of school directors apply to special committees appointed by the board, and preclude part of the members of such committee from discharging the duties of or entering into a contract for the committee.

Another Arkansas case[7] is practically the same as the one mentioned above. The corporate authority of a district school board must be exercised by it when convened as a board, and the members thereof cannot act as individuals. Tennessee[8] requires the directors of a school district to act together as a board, and they cannot delegate to each other the performances of duty cast upon them by law. Illinois[9] holds that when a contract is made by any person, committee, or officer acting for a school district under its authority, such contract, when made under such authority, must be ratified by a majority vote of the controlling board of the district. Arkansas[10] says, again, that it is only when the board of school directors convene and act together as a board that they bind the district by their acts.

The courts will not allow the board to delegate powers which involve discretion and which they are supposed to exercise as a corporate body. Kentucky[11] holds that the board of education cannot confer its powers involving the exercise of discretion on another, and, therefore, cannot authorize an agent to construct an addition to a school building, giving the agent authority to determine the character, size, materials, and cost of the addition.

In a Kentucky decision[12] it was held that, since two members of the

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[5]Ark. Nat. Bank v. School District, 238 S. W. 630.
[6]Midland Chem. Lab. v. Sch. Dis., 260 S. W. 726.
[7]Barton v. Hines, 1855 S. W. 455.
[8]State v. Jones, 224 S. W. 1041.
[9]Nat. Bank of Decatur v. Bd. of Ed., 205 Ill. App. 57.
[10]School District v. Jackson, 161 S. W. 153, 110 Ark. 262.
[11]County Bd. of Ed. v. Durham, 249 S. W. 1028.
[12]Kentucky (1907).

board constituted a quorum to transact business by law, a census certified to by only the chairman of the board of trustees was not the act of the district, and the county superintendent had no power to make it a part of his records. Iowa[13] held that under the statute making it the duty of the board of a school township to select the site, adopt the plans for the schoolhouse, and award the contract for the building thereof, the board cannot delegate such powers to a committee appointed by it. Pennsylvania[14] has the following ruling on the delegation of the power to examine teachers and to fix their salaries. An Act of February 12, 1869 (P. L. 150), creating the Central Board of Education of Pittsburgh, gives no power to such board to appoint a salary commission and delegate to it the power to examine teachers and fix their salaries. Illinois[15] boards of education of township high schools and boards of directors of district schools cannot delegate to others the discretionary powers conferred upon them by law. In Florida[16] a county superintendent of public instruction had no authority to contract for the county board of public instruction to pay a stenographer in his office for services rendered so as to create an obligation on the part of the school board to pay the expenses out of the county school fund. In New Jersey[17] it was held that a contract for heating apparatus in a schoolhouse can be entered into by a board of education only when passed upon by the board at a regular meeting, and it cannot delegate this duty to its president and clerk. Another case, which probably does not bear directly on the question under discussion, came up in Texas.[18] It was held that responsibility and ultimate authority in the matter of purchasing and distributing textbooks are in the hands of the state board of education, and that the attorney-general cannot elect for the state to accept or reject a contract for textbooks that is voidable.

There are a number of cases which permit the delegation of certain powers to committees of the board. A Texas court[19] held that the trustees may appoint a building committee to let a contract previously authorized for the erection of a school building and to take a bond for its performance. In a Pennsylvania case[20] the court held that under an Act of April 11, 1899 (P. L. 38), empowering school boards to act with a view of abating any contagious disease prevalent in their dis-

[13]Kinney v. Howard, 110 N. W. 282, 133 Ia. 94 (1907).
[14]Houston v. Central Bd. of Ed. of Pitts., 68 A. 1036, 220 Pa. 33 (1908).
[15]Stroh v. Casner, 201 Ill. App. 281.
[16]Clifton v. State, 79 So. 707.
[17]Am. Heat. & Vent. Co. v. Bd. of Ed., 79 A. 313, 81 N. J. Law 423 (1911).
[18]Charles Scribners' Sons v. Marrs, 262 S. W. 722.
[19]Wright v. Jones, 120 S. W. 1139, 55 Tex. Civ. App. 616 (1909).
[20]Marlatt v. Aleppo Sch. Dis., 34 Pa. Super. Cit. 323 (1907).

trict, a school board has power through a committee of the board to enter into a contract with an undertaker, binding upon the school district, to bury a poor person who has died of the smallpox. It is not necessary that such a contract should be made by a sanitary agent selected in the manner prescribed by the Act. A ruling was handed down in Kentucky[21] that the court, in construing the power conferred by the board of education of a city on a committee thereof, will not only look to the language used in conferring the power, but also consider the purpose of the appointment of the committee; and the interest of the board must be sought, so that the scope of the order conferring the power may be measured. A Nebraska court[22] decided that certain powers of the board which had been delegated to a committee were a reasonable exercise of power delegated to the board by the statutes. A rule adopted by a board of education providing that its committee on teachers and janitors shall annually, after the organization of the board in May, report the names of teachers and janitors to be selected by the board and the salaries to be paid them, and to recommend three competent persons to inquire into the qualifications of applicants desiring to teach in the public schools, is a reasonable exercise of the power delegated to the board by the statutes.

In Vermont[23] it was held that the town had power to construct schoolhouses through a building committee, the authority not being vested exclusively in the school directors.

III

THE RECOVERY OF FUNDS ILLEGALLY EXPENDED

There are only a limited number of cases which deal with the recovery of funds which have been illegally expended—that is, recovery from the individuals to whom the warrants have been issued. Numerous cases may be found which set forth rulings with regard to the liability of the school officers when funds have been misapplied. This is a different matter, however, from the recovery of the wrongly used funds from the individuals to whom the money has actually been paid. As a general rule, it may be said that school officers acting as a corporate body, in the absence of fraud, are not personally liable for the illegal expenditure of funds or for obligations illegally contracted. Neither may they be held individually liable, as a general rule, for contractual obligations which have been assumed by them acting as a corporate body in the interests of the school district. Such gen-

[21] Byrne and Read v. Bd. of Ed., 131 S. W. 260, 140 Ky. 531 (1910).
[22] Nebraska (1910).
[23] Spencer v. Sch. Dis. of Hartford, 88 A. 510, 87 Vt. 152.

eral statements, however, have no direct bearing on the recovery of funds from the persons to whom the money may have been paid.

Iowa[24] has a case in which the court ordered money refunded which had been paid out in violation of an injunction duly issued. An agreement by the board of education of an independent school district to employ one of their directors as local superintendent of the construction of a school building and to pay him for such services is void, and its performance may be restrained by a taxpayer without showing actual fraud. In this case the director was to get two per cent of a high-school building contract for $52,425, and he had already received about $100. The board would have been willing to complete the payment.

In Louisiana[25] one school board may recover from another funds illegally paid defendant by the state authorities which should have been paid plaintiff. If the funds were not in the defendant's possession, but can be traced to property in which they have been invested by it, the property can be recovered.

A Nebraska court[26] ordered money repaid on condition only that the city re-convey the property for which the purpose of the payment was made. This is not a school case, but is of interest. It was alleged that the mayor and clerk of the town had conspired with a party to defraud the town in the purchase of a cemetery lot. The mayor and clerk issued a warrant payable to the mayor himself and for the ostensible purpose of purchasing the cemetery lot for the town. Since no appropriation had been made for the purpose and no ratification had been proved, the mayor and clerk were held liable for the amount drawn on such order. Even in the absence of fraud a judgment was had against the mayor and clerk for the sum of $716.66, to be paid in ninety days, provided the city within that time should execute and deliver to them a good and sufficient title conveying to them the title of the city to the land in question.

A suit was brought in Wisconsin[27] to rescind the purchase price of a schoolhouse site, for fraud and conspiracy in its purchase—or, in other words, to return to the seller the land bought and recover the money paid therefor. The defendants sold to the school board, acting on behalf of the district, a parcel of land to be used for a new schoolhouse. The land was half a mile distant from the place which had been legally designated as the site by the district meeting. Defendant and the board both knew of the action of such meeting, and the sale

[24] Weitz v. Independent Dis., 78 Ia. 37, 42 N. W. 577 (1889).
[25] East Carroll Parish Sch. Bd. v. Union Par. Sch. Bd., 36 La. Ann. 806 (1884).
[26] City of Blair v. Lantry, 31 N. W. 790 (1887).
[27] Egaard v. Sch. Dis., 85 N. W. 369 (1901).

was made for the purpose of defeating the voters' will. The evidence was held sufficient to entitle a taxpayer of the district to maintain suit to have the transfer rescinded and the consideration returned to the district. In this case the man who made the sale of the lot to the district was a member of the school board—the treasurer, in fact.

In Missouri,[28] action was brought by a school district to recover from one of the directors and the clerk of the school board the amounts of certain school warrants issued and paid by the county treasurer out of the funds belonging to the district, on the grounds that the warrants had not been issued at regular meetings of the board and there was no record of the action of the board authorizing their issuance. While there was a dispute on the facts, it was held that under no theory of the evidence could the plaintiff recover, the warrants having been issued in payment of legal demands against the district.

In Iowa[29] the court dismissed an action brought to enjoin the payment of money, or, if already made, to compel the return of it, by the officers of the school district. It had been alleged that annexes to buildings were constructed without first being authorized by a vote of the electors and without obtaining the approval of the county superintendent. Furthermore, it was claimed that members of the board were interested through firms owned by relatives of such officers. The court said:

> There are cases which hold that money paid upon a contract entered into by public officers in violation of an express statute, or where the money is paid for a purpose that is in itself illegal or immoral, may be recovered without returning the consideration thereof; but we think that no such recovery has ever been sustained where the contract is assailable only as against public policy because of having been made with one who stood in a fiduciary or official relation to the corporation with whom he contracted, and the corporation retains the fruits of the contract sought to be repudiated.

There is, however, a Missouri case[30] wherein it was held that the county judges who had issued warrants on the school fund to pay general county debts must replace the money. In this case the court said:

> As the county received the benefit of the money thus misapplied, it is but simple justice that it should return to the defendants from its general revenues such sums as they may be obliged to pay in restoring this county school fund.

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[28] School District v. Smalley, 58 Mo. App. 658 (1894).
[29] Kagy v. Indep. District, 117 Ia. 694, 89 S. W. 972 (1902).
[30] Knox County v. Hunolt, 110 Mo. 67 (1892).

TEACHING WITH MOTION PICTURES

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Somewhat more than a year ago the daily press quoted Thomas A. Edison as expressing the belief that eighty-five per cent of all acquired knowledge comes through the eye, and that, because of this fact, moving pictures would within a decade revolutionize educational methods by supplanting both teachers and textbooks. Mr. Edison was quoted also as considering that the innovation would make education absorbingly interesting and fairly permanent. In fairness to the eminent scientist here referred to, the fact should be stated that a year later we find his opinion somewhat changed, and that now he would perhaps offer the word "supplement" for "substitute."[1] Possibly in his own laboratories, or because of evidence which is beginning to pile up on the outside,[2] he is becoming convinced that his former expectations for the new invention were a little too hopeful.

In an attempt to get some first-hand evidence on a small scale which might answer the question, "Of what value are moving pictures in instruction?" an experiment was carried out during the months of February, March, and April of 1924 by four teachers of the McComb (Miss.) Junior High School, which, as it is briefly described herein, may suggest some of the possibilities which lie in the use of educational pictures.

In order to get a fair basis for comparing the efficiency of instruction where moving pictures are employed, it was deemed necessary to obtain films of an educational type which were closely related to the subject-matter of the textbook. The subject of Agriculture seemed to offer an advantage in such a study, because several agricultural films had been produced by the United States Department of Agriculture and by the International Harvester Company which met this condition. Five films were selected for the investigation, three being supplied by the Extension Bureau of the Mississippi State Agricultural and Mechanical College and two by the International Harvester Company.

All the pupils involved in this study were regular attendants of the Junior High School. The ninth, eighth, and sixth grades were employed. There were 17 pupils in the ninth, 11 pupils in the eighth,

[1]The Educational Screen, Chicago, Ill.; February, 1925.
[2]From Weber, Freeman, and others.

and 26 pupils in the sixth grade. The state-adopted textbooks were being used in the sixth and eighth grades. The ninth grade had no text, and the purpose in employing this grade was to get a comparative evaluation of teaching with films and by pure lecture methods.

Each grade was divided into two groups of equal ability on the bases of teachers' estimates and intelligence tests; these groups were designated as X and Y in each grade.

THE FIRST EXPERIMENT

In the first study the Y groups observed the moving picture while the X groups were in their respective classrooms reciting in the regular way. It should be noted that the controlled group of the ninth grade was always taught orally or by lecture. The films were run with brief comment on the part of the teacher in charge, who called attention to essential facts and principles. The film period averaged about twenty-five minutes, and was from five to ten minutes shorter than the period of the textbook and lecture groups, as some extra time was required in transferring the experimental groups to the projection room and in making machine and film adjustments. At the close of the period the X and Y groups of the three grades went to the auditorium; there, under careful supervision, they received the same test, the questions of which were answerable from a study of the text, of the film, or of the lecture as given in the ninth grade. After the test, each pupil's paper was scored by two teachers. The score given by each teacher was unknown to the other, and the average of these two markings was used to get the final score of the paper.

The first film used in the experiment was entitled "Corn Culture." It had been prepared for the State Agricultural and Mechanical College, and was typical of actual conditions in Mississippi, as it was made in a progressive farmer's field in the north central part of the state. The pictures showed the preparation of the soil, the fertilization, the planting, and the cultivation and harvesting of the corn crop. As this film was closely related to the treatment given in the textbooks, it was believed that valid results could be obtained from using it in a comparison. Before the subject was taught, all the teachers viewed the film. They were thus prepared to correlate the study and the instruction of the control groups with such material as was covered by both film and text. The teacher who taught the ninth grade had access to both the film and a related text in making preparation for his lecture.

It was agreed that content questions, even though liable to subjective marking by the two teachers who scored the tests, would give a truer picture of the situation than completion, or true-false questions.

Before the test was given, the questions were agreed on by all the teachers concerned as legitimate and answerable by any of the three groups. After the test, a form of acceptable answers was given to each teacher, which was used as the basis or scale of his scoring. The test questions and scale of acceptable answers as used for all the groups in the study of "Corn Culture" follow:

COMPARATIVE TEST I—CORN CULTURE

TEST QUESTIONS

1. What are the qualities of a good seed ear?
2. Give directions and reasons for testing seed corn.
3. What kind of soil and what preparation are needed for corn?
4. Tell how to plant corn and when to plant it.
5. Describe the cultivation of corn, and give three reasons for cultivating.

BASIS FOR ACCEPTABLE ANSWERS

1. Should be regular in slope; well-filled tips and butts; rows and grains close together; grains wedge-shaped and sound.
2. Pupil should give a description of either the "Rag Doll" or "Sawdust Box" germinator. Good seed, selected and tested, needed for a good yield.
3. Deep, moist, rich soil. Should give the steps of thorough preparation.
4. Plant about 1½ inches deep—April to July in this section of the country.
5. Cultivation should be often and shallow, and as early as possible after a rain. Reasons: (1) to keep down weeds, (2) to conserve moisture, (3) "tillage is manure." It promotes air circulation and root growth.

Since a description of the first test and a statement of the results obtained will be fairly representative for all of the tests made, it will only be necessary to give the results of the first test and a summary of the whole. The mean score as given each pupil on the first test is shown in the accompanying table. The mean group scores afford a convenient basis for comparing the different methods of instruction.

The four films used in the rest of the experiment were on the subjects: "Live Stock and Dairying," "Potatoes," "Poultry," and "Seed Corn." A rotation plan was employed, so that the control group of one week would be the experimental group of the succeeding week. For example, the X groups were taught in the traditional way the first week while the Y groups were taught with the film. The next week, the Y groups were taught with the texts while the X groups studied the subject through the film. When the grand average of the scores was made, it was thought that this rotation plan would have a tendency to minimize any discrepancies which might have arisen in equalizing the groups or which might have affected the final results because of previously acquired knowledge.

TABLE A

SCORES FOR TEST ON CORN CULTURE

PUPIL	SIXTH GRADE		EIGHTH GRADE		NINTH GRADE	
	X Group	Y Group	X Group	Y Group	X Group	Y Group
	Text	*Film*	*Text*	*Film*	*Lecture*	*Film*
1	64	87	69	95	86	96
2	40	70	66	91	71	88
3	25	62	67	74	ab*	94
4	32	67	61	75	88	94
5	48	ab	62	69	72	84
6	46	47	----------	82	30	81
7	32	84	----------	----------	66	75
8	66	78	----------	----------	50	71
9	35	73	----------	----------	59	----------
10	58	70	----------	----------	----------	----------
11	30	67	----------	----------	----------	----------
12	38	34	----------	----------	----------	----------
13	33	56	----------	----------	----------	----------
Means	42.2	66.3	65.0	81.0	65.2	85.5
Film Advantage	24.1		16.0		20.3	

*Absent.

The composite or grand average of the scores for the observations made with the five films shows that instruction with moving pictures was superior in the three grades to the extent indicated below:

6th Grade	8th Grade	9th Grade
14.2%	14.1%	21.4%

It will be observed that the mean results for the sixth and eighth grades, which were taught under the same conditions, are approximately the same.

It was desired also to compare the efficiency of moving-picture instruction in review; so, two weeks after the fourth film was studied and four weeks after the first film was used, the same tests which had been previously given were given again under the same conditions as before. The mean results of the two reviews show the superiority of instruction with moving pictures as follows:

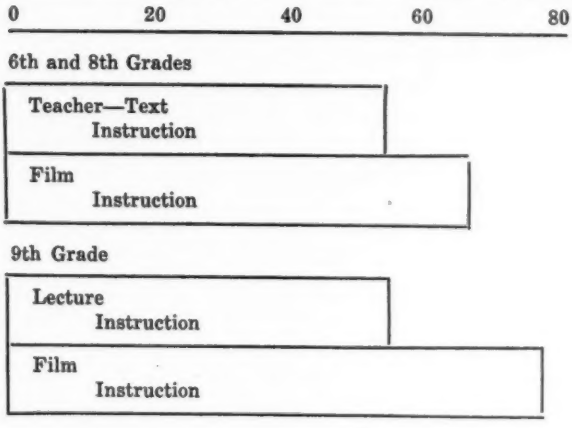
6th Grade	8th Grade	9th Grade
11.4%	15.5%	20.0%

Figure I graphically illustrates the results of this study in comparing moving pictures with conventional methods for (1) instruction, (2) review.

FIGURE I

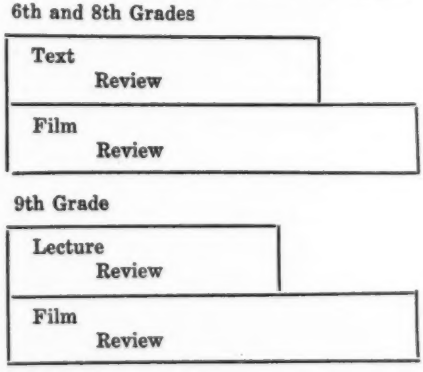
(1)

COMPARATIVE ADVANTAGE OF MOVING PICTURES IN INSTRUCTION



(2)

COMPARATIVE ADVANTAGE OF MOVING PICTURES IN REVIEW



No claim is made that the findings of the experiment described herein are final or conclusive. It is realized that there are many sources of error in such an investigation, some of which have been suggested, and it is also realized that a much larger number of cases would have been desirable.

THE FIELD OF VISUAL INSTRUCTION

Without disparaging the value of visual aids in instruction, it appears that the cause of visual education has been done much harm by

the over-enthusiastic zeal of some of its advocates. Learning is a process affected by all the senses, and it will never be possible, perhaps, to say in percentage terms just how much one learns through any one of the sense organs.

The supreme value of moving pictures seems to come in those types of instruction in which motion, processes, scientific phenomena, and the like are involved. In some forms of teaching a simple photograph will get the same results as an expensive moving picture.[3] In the teaching of facts and content matter such as mathematics, English, and languages, moving pictures seem to offer little or no advantage over still pictures as visual aids.

From the practical standpoint and from the standpoint of material economy it should be said also that as yet we have a very limited number of educational films, and the cost of using these makes it impossible for many of our schools to get any benefit from them. Progress is being made in this direction, however; and as more and better educational films are produced and made available at a minimum cost, it is not too much to say that probably every progressive school should have a portable projector and that at least one teacher of the school should have studied enough of the fundamental principles of visual instruction to be able to use such an equipment opportunely and wisely.

This study should suggest that there is a great need for extensive and thorough investigation in this field. Educators in general, and administrators in particular, should know just what is the significance and the value of moving pictures as aids in instruction.

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[3]Berkeley (Cal.) Course of Study Monographs.

A PUBLIC SUMMER SCHOOL OF MUSIC FOR MUSICAL CHILDREN

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Evanston, Ill.

In 1925 the public schools of Evanston, Illinois, conducted a unique educational project in the form of a Public Summer School of Music for gifted musical children. Although the first of its kind, the school in reality was the logical outgrowth of a plan of music education which has been in operation in the schools of Evanston for eight years.

This plan has elsewhere been described at length. It may be summarized briefly as an organized arrangement of school music courses so planned as to differentiate the music education of each individual child in accordance with his natural capacities and interests. The following statement of the place of music in the public schools will serve to explain the administrative policies out of which the summer school of music grew: *Every child should be educated, at public expense, in music, as well as in other subjects, according to his natural capacities; and his music studies should function in the life of the community.* In pursuance of this plan, for the last eight years the Evanston school children who were found to be musically talented and interested have been enrolled, as a regular part of their public-school work, in classes in various special fields of music study.

The 1925 Summer Music Session was organized to provide these talented children with an opportunity for six weeks of additional thorough and intensive instruction and drill in music under the most favorable conditions for rapid progress.

ADMINISTRATION

The general administration of the school was in the hands of a Director, serving regularly under the Superintendent of Schools. The expenses were met by regular school funds appropriated for the purpose by the Board of Education. There was no charge made the pupils for instruction. The teaching force consisted of the members of the department of music of the Evanston schools, assisted by other members of the regular teaching force. The teachers' salaries were paid by the school board at the regular summer-school rates; and a conveniently located school building, with adequate equipment, was provided for the use of the summer session.

The most important difference between the summer music session and the other summer classes conducted by the Evanston schools lay in the fact that whereas the other classes were perhaps devoted chiefly to making up deficiencies by backward children, the music classes were specifically conducted in order that selected talented children might receive additional and advanced instruction and drill in their special field of interest.

ATTITUDE OF PARENTS AND PUPILS

The reception of the innovation by the parents of the invited children was unexpectedly enthusiastic. In a large number of instances the family vacation plans were changed to enable the child to attend the session. Many parents visited the classes, some coming several times and a few almost daily. The rapid progress made by the pupils was followed with keen interest.

The children took delight in every feature of the school. The record of attendance is ample evidence of their eager desire to receive the instruction offered. Not a single case of punishable misconduct occurred during the session. Even tardiness practically did not occur. The large amount of routine passing through the corridors was done with such simple and natural absorption in the work ahead that disciplinary organization was reduced to the minimum.

HOW PUPILS WERE SECURED

Early in May, 1925, a list was made of the children enrolled in the regular music classes of the public schools who seemed to the teachers to exhibit marked musical ability. A letter was sent to the parents of each of these children, telling in detail the plans for the Summer School and inclosing a blank to sign and return if they wished their child enrolled.

From these returns a tentative daily schedule was worked out for each child, and in June a second letter was sent to the parents, inclosing a copy of the schedule and a full set of instructions for the guidance of the child in his daily routine of summer study of music. Duplicates of these daily schedules were, of course, kept on file in the office. These preliminary measures greatly simplified the work of administration and made possible the conducting of the Summer School on the regular schedule the opening day of the session. Each teacher had in advance a list of his pupils for every class, and ushers were, on the first day, stationed in the corridors to help the children move without confusion from one classroom to another.

EQUIPMENT

The Evanston School Board assigned for the music school a building rather centrally located, in which there were several notably large classrooms and an assembly hall, in addition to classrooms of the usual dimensions. Pianos were brought from other buildings, so that each room was provided with one instrument, and the rooms particularly devoted to instruction in Piano with two each. Three rooms were equipped with victrolas for Appreciation lessons, and the collections of records of all the schools in the city were used as needed.

TEACHING FORCE

The teaching force of the music summer session consisted of three teachers of Singing and Music Appreciation, two teachers of Piano, two teachers of Orchestral Instruments and Instrumental Ensemble, and two Playground Directors—a total of nine teachers. The Director had the coöperation of the Supervisor of Music of the Evanston elementary schools, who supervised the Vocal and Appreciation instruction and the practice teaching. An advanced student from the Department of Public-School Music in Northwestern University assisted the Director in conducting the school office routine. The Playground Directors were provided by the Municipal Department of Recreation,

Students in the Summer Session of Northwestern University were permitted to observe the classes and, to a limited extent, to do practice teaching.

DAILY SCHEDULE OF CLASSES AND CLASS ENROLLMENT

9:00	Grade III—Singing	23 pupils
	Grade VII—Singing	26 "
	Grade VIII—Singing	36 "
	Grade IV—Piano, Lower Group	18 "
	Grade IV—Piano, Upper Group	9 "
	Grades IV, V, VI—Violin, Lower Group	18 "
	Grades IV, V, VI—Wood-wind Instruments	6 "
9:30	Grade III—Music Appreciation	23 "
	Grade VII—Music Appreciation	25 "
	Grade VIII—Music Appreciation	36 "
	Grades V, VI—Piano, Lower Group	21 "
	Grades V, VI—Piano, Upper Group	16 "
	Grades IV, V, VI—Violin, Upper Group	8 "
	Grades IV, V, VI—Brass Instruments	4 "
	Recreation Period for children not otherwise scheduled (two groups)	
10:00	Grade III—Piano (Beginners)	16 "
	Grade IV—Singing	41 "
	Grade V—Music Appreciation	30 "
	Grade VI—Music Appreciation	49 "
	Grades VII, VIII—Piano, Upper Group	18 "
	Grades VII, VIII—Stringed Instruments, Lower Group	6 "
	Grades VII, VIII—Brass Instruments	4 "
	Recreation Period for children not otherwise scheduled (two groups)	

10:30	Grade III—Piano, Upper Group	16	"
	Grade IV—Music Appreciation	41	"
	Grade V—Singing	32	"
	Grade VI—Singing	49	"
	Grades VII, VIII—Wood-wind Instruments	7	"
	Grades VII, VIII—Stringed Instruments, Upper Group	8	"
	Grades VII, VIII—Piano, Lower Group	14	"
	Recreation Period for children not otherwise scheduled (two groups)		
11:00-12:00	—Advanced Orchestra	19	"
	Elementary Orchestra	18	"

Slight discrepancies will be found in the figures of the above account, which are due to various irregularities in registration.

It will be noted that each grade had its own Singing lesson; that the Piano instruction was given to eight graded groups; that Wood-wind Instruments and Brass Instruments were taught in two graded groups each; that Violin instruction was given in four graded groups; that Orchestral Ensemble was conducted in two graded groups; and that in each period after the first there were two Recreation groups—one of younger and one of older children. The Playground Directors served as ushers and general administrative assistants during the first period daily and at the changing of class periods.

ENROLLMENT STATISTICS

Total 1925 enrollment of pupils in Evanston schools in grades from which summer music pupils were selected		2,829
Enrollment acceptances received from parents prior to the opening of the school:		
For Boys	83	
For Girls	160	243
Pupils failing to appear or dropping out during the session:		
Boys	22	
Girls	22	44
Pupils remaining throughout the session:		
Boys	61	
Girls	138	199
Average daily attendance (97%)		193

RESULTS OF INSTRUCTION

The instruction in all the subjects offered was the same as given in the winter classes, both in content and method; and pupils were placed in the next grade above the one in which they were at the end of the winter session just completed. Fear had been expressed in some quarters that this procedure would disturb the fall term of school, in that the grading of classes in Music would there be upset because of the summer term. What really has developed is that in

the Singing and Appreciation classes the pupils of the summer school have in the winter session not proved to be out of place, but have brought with them an enthusiasm and spirit of leadership which has permeated the whole school system and vivified and inspired the Music classes to a new and higher level of achievement and enjoyment. In the instrumental classes the same results have been noticeable, in addition to which the advanced technique of the pupils gained from the summer instruction and practice has served to promote them to more advanced classes and also has benefited to a marked degree the school orchestras and bands.

SUMMARY

In this brief account of the Music Summer Session, only the essentials of the idea have been presented. Many details could be added, which would describe and explain matters of organization and administration. Recognition must, of course, be made of the fact that the ability and enthusiasm of the instructors were chiefly responsible for the success of the experiment. This article omits also mention of many interesting side lights on various phases of the summer session. For example, one of the many problems which arose was that of dealing with groups of uninvited children who wanted to enter the school. These came almost every day for the first couple of weeks. They were permitted to attend the Appreciation and Recreation classes. Because the school was conducted at public expense, it was, of course, desirable to have the accommodations sufficiently elastic to take care even of children without particular talent who were interested enough to apply for admission.

That the venture was a success has been shown in many ways. Three may be mentioned: (1) The quality of enthusiastic leadership in Music shown by the pupils of the Summer Session has had a marked effect on the general Music work of the whole school system during the present year, as attested by the entire teaching force; (2) the parents of the children who attended the session are enthusiastic over the results secured, in both interest and attainment in Music; and (3) the Evanston School Board has decided to continue the plan during the coming summer.

Perhaps other communities may wish to consider the advisability of providing similar opportunities for their gifted musical children.

AN ANALYSIS OF SCORES ON THE ILLINOIS EXAMINATION

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The present study is based on the scores made by 209 fourth, fifth, and sixth-grade children on the Illinois Examination, which includes the following three tests: (1) The Illinois General Intelligence Scale, (2) Monroe's General Survey Scale in Arithmetic, and (3) Monroe's Standardized Silent Reading Tests (revised).

The General Intelligence Scale consists of seven tests—(1) Analogies, (2) Arithmetic Problems, (3) Sentence Vocabulary, (4) Substitution, (5) Verbal Ingenuity, (6) Arithmetical Ingenuity, and (7) Synonym-Antonym. The one scale was used for all the grades tested.

"Monroe's General Survey Scale in Arithmetic for Grades III, IV, and V consists of four tests on the fundamental operations (one for each operation) and four tests involving simple examples in the operations. For Grades VI, VII, and VIII the scale consists of seven tests, as follows: (1) Column Addition, (2) Long Multiplication, (3) Long Division, (4) Subtraction, (5) Addition and Subtraction of Fractions, (6) Multiplication and Division of Fractions, and (7) Division of Decimal Fractions."[1]

Similarly, two forms of the reading tests were used—Test I for Grades IV and V, and Test II for Grade VI. These tests are so well known that no description of them will be given here.

WHAT THIS STUDY AIMS TO LEARN

The purpose of the study is to discover to what extent the abilities tested by the different tests are identical, and, if possible, the nature of the identities. Obviously, these questions are of fundamental importance to educational theory, for training in arithmetic and in reading constitutes a major portion of the earlier schooling of the child. Little effort has been made to determine the nature and extent of the interrelations of these subjects. Under the pernicious influence of the rationalistic faculty psychology, in the form of its educational variant, the formal discipline theory, education has been slow to adopt quantitative methods. And even to-day the great majority of work-

[1] *The Illinois Examination I and II, Teacher's Handbook*, by Monroe, W. S., and Buckingham, B. R., p. 2.

ers in education limit their efforts to broad generalizations and to linguistically derived principles. But education is gradually moving toward a more scientific point of view, and it becomes more and more important to know whether or not reading and arithmetical abilities are closely related, whether, and to what extent, they depend upon special aptitudes little related to "general intelligence," or whether they are closely related to the latter. These are only a few of the interesting and very important problems that can be approached by methods used in this study. The results presented below are not regarded as final, but they are interesting as indicating general tendencies and as serving to emphasize the need for quantitative investigation of these questions.

THE SUBJECTS

The children tested included all those of the above-mentioned grades in one of the grammar schools of Chattanooga, Tenn.[2] The following table gives the mean and median scores and the standard deviations for the three tests and for chronological age:

TABLE I

	MEAN	MEDIAN	S. D. (from mean)
1. Chronological age	10.45	10.94	2.65
2. Mental age	9.87	10.38	3.74
3. Arithmetic age	10.47	10.76	3.96
4. Reading age	8.47	9.41	5.10

The mean and median I.Q.'s, computed individually for each subject, are .98 and .996, respectively. I.Q.'s, however, are not very significant when the selection is by grades; and the fewer the consecutive grades taken, the less significant does the I.Q. become as an indicator of the relative general correspondence of mental to chronological age. Thus, Table II shows that the mean mental age corresponding to a given chronological age is higher than the chronological age in the younger years, but that it decreases relatively as older and older years are taken.

[2]The data analyzed in this study were kindly furnished by Mr. W. T. Davis, of the Ridgedale School, Chattanooga. The calculation was done by the writer, assisted by Mr. J. A. Lewis, and especially by Mr. M. C. Barlow, both graduate students in Psychology in George Peabody College for Teachers. The work was done in a Special Problems course in Psychology under the direction of Professor Joseph Peterson, to whom the writer is indebted for numerous criticisms and suggestions.

TABLE II

Number cases	1	6	28	21	40	13	41	17	19	10	8	0	4	1	1
C. A.	8	8–6	9	9–6	10	10–6	11	11–6	12	12–6	13	13–6	14	14–6	15
Mean M. A.	7–9	9–1	9–9	9–9	10–4	10–7	10–8	10–4	10–9	10–8	11–2	....	10–3	12–3	10–9

The younger children of a given grade seem regularly to have a higher mental age than the older ones. Selection by grades, then, is not as satisfactory as selection by age, especially if only a few grades are to be tested. In testing large numbers of school children, however, it is almost necessary to take them by grades, since any other arrangement will almost certainly meet with opposition from school authorities. If such opposition is not encountered, difficulties of getting groups of equal ages, irrespective of grade classification, are considerable.

These questions, however, are only incidental to and do not affect very seriously our present problem—namely, the analysis of the interrelations of the factors involved. This problem we shall now consider.

METHOD

The method of analysis used is that of partial and multiple correlation, now well known to students of psychology and of education. Both the original, total correlations and the calculation involving partial and multiple correlation methods have been carefully checked by several persons, and it is believed that the results as presented are essentially correct.

RESULTS

The following notation and abbreviations of the four factors are used throughout:

1. Chronological age (C. A.)
2. Mental age (M. A.)
3. Arithmetic age (A. A.)
4. Reading age (R. A.)

The total correlations and the partial correlation coefficients for three and for four variables are given in Table III. The regression coefficients are found in Table IV; only regression coefficients involving four variables are given.

Each factor will be considered in relation to each succeeding factor, as they are found above.

A. *Chronological Age*

Superficially, the correlation of C. A. seems to be about the same with each of the three other factors—that is, when only the total cor-

relations are considered. The correlation with M. A. is the same as that with R. A., while that with A. A. is somewhat higher.

When the elements that C. A. and M. A. have in common with A. A. are held constant, however, there is no relation whatever evident (r12.3 is .012). The correlation of C. A. with R. A., which is the same as that of M. A. and C. A., is reduced about one-half, and is statistically unreliable, when the A. A. factor is controlled. It seems, then, that A. A. bears the only constant relationship to C. A.

TABLE III

A. Total Correlations

	r	P. E.		r	P. E.
r12	.23	.044	r23	.67	.026
r13	.33	.042	r24	.64	.027
r14	.23	.044	r34	.39	.039

B. Partial Correlation Coefficients (three variables)

	r	P. E.		r	P. E.
r12.3	.01	.047	r23.1	.64	.027
r12.4	.11	.046	r23.4	.59	.031
r13.2	.24	.044	r24.1	.62	.029
r13.4	.27	.044	r24.3	.56	.032
r14.2	.11	.046	r34.1	.34	.041
r14.3	.12	.046	r34.2	−.07	.047

C. Partial Correlation Coefficients (four variables)

	r	P. E.		r	P. E.
r12.34	.06	.046	r23.14	.58	.032
r13.24	.25	.043	r24.13	.56	.032
r14.23	.12	.046	r34.12	−.07	.047

TABLE IV

Regression Coefficients (four variables)

	b	P. E.		b	P. E.
b12.34	−.07	.052	b31.24	.30	.053
b13.24	.22	.039	b32.14	.73	.047
b14.23	.06	.049	b34.12	−.08	.035
b21.34	−.06	.052	b41.23	.21	.067
b23.14	.48	.031	b42.13	.92	.061
b24.13	.34	.024	b43.12	−.12	.063

This is seen further when the latter two factors are correlated. The total correlation of .33 is not very greatly lowered when either or both M. A. and R. A. are controlled (r13.2 is .24, r13.4 is .26, and r13.24 is .25). This is not a very high degree of relationship, but it persists, and may be due to the fact that the content in arithmetic is more definite, that the advances in school work in this subject are more regular and more in conformity to chronological age. Children read aside from their school work, whereas they have little practice in arithmetic in addition to the prescribed lessons. The lack of correlation between M. A. and C. A. is due to the fact that only a few grades were tested, and, as was remarked above, the selection would include bright younger children and dull older ones. Within as narrow a range of selection as a single grade the correlation would be expected to be negative.

B. *Mental Age*

M. A. and A. A. correlate rather highly, and the correlation remains high when either of the other factors is controlled and when both are controlled (r23 is .67, r23.1 is .64, r23.4 is .59, r23.14 is .58). This agreement may be due in some measure to the nature of the intelligence tests given, since two arithmetic tests are included in it.[3]

Almost the same correlation is found between M. A. and R. A. as existed between M. A. and A. A.; and similarly, also, the correlation is not very appreciably lowered when C. A. and A. A. are held constant, individually or both together. The controlling of C. A. hardly affects the correlation at all ($r24 = .64$; $r24.1 = .62$), while keeping constant the A. A. factor reduces the coefficient to .56. Thus it seems that while M. A. is rather highly related to both A. A. and R. A., the same elements are not common to all three. Let us consider the correlation of A. A. and R. A., where further evidence supports this view.

C. *Arithmetic and Reading Ages*

The total correlation of .39 between these two factors seems to be due entirely to the presence of M. A.; or, to state it differently, when the elements that both have in common with M. A. are controlled, all evidence of correlation disappears ($r34 = .39$; $r34.2 = .07$). When this result is taken with those of the preceding two paragraphs, an interesting interrelation between the three factors—M. A., A. A., and R. A.—is noted. Certain elements are common to all three, and, for practical purposes, we may say that these common elements are repre-

[3]The authors, however, report a correlation of .74 with the Stanford Revision of the Binet Scale on 203 children, and of .81 with the National Intelligence Scale on 3,615 children; "for 124 VI-B pupils the value of r was .83" with the Otis Group Intelligence Tests.

sented by the coefficient r34 = .39. But, in addition to these elements that are common to *both* A. A. and R. A., M. A. is further related to each of them, and to each of them differently.

These results do not seem to substantiate the theory that intelligence is a single homogeneous factor. If a single term, "intelligence," is used, it probably should refer to a multiplicity of factors or abilities that manifest themselves variously and in different degrees in each individual according to the situation to which he is reacting. Obviously, only convenient abstractions give us such conceptions as that of a general intelligence factor functioning somewhat as a unit in the various operations. The organism is the "common factor," the real unit. This view is clearly stated in the following quotation:

> "The combination of traits that makes up what we call the highest intelligence in one vocation or line of endeavor is not the same that gives the highest intelligence in another. There is, however, no occasion to deny that some individuals measure up well from all standpoints, while others have low mentality in all lines. The intelligence of any given individual seems, therefore, to be a complex of several abilities, none of which may be entirely absent in any individual; but the relative emphasis of any one factor varies from individual to individual."[4]

Arithmetic and reading involve by no means identical abilities, if these results prove to be of general validity. They have elements in common, but they have unrelated elements as well; and neither of these facts should be omitted from consideration in practical education. Success in the reading tests probably depends more upon alertness in the pupil and upon the quickness and range of contiguity association. In the arithmetic tests, especially the problems, more of analysis is involved, more association by similarity, together with a type of organization that does not admit of errors in calculation. Obviously, therefore, teaching these two processes would require rather different uses of the probably overworked element of repetition.

D. *Multiple Correlations*

These coefficients are given in Table V, together with the coefficients of alienation for each of them. Only coefficients involving four variables are given.

TABLE V

Multiple Correlation Coefficients (four variables)

	r	P. E.	k		r	P. E.	k
r1.234	.35	.041	.94	r3.124	.69	.024	.72
r2.134	.78	.018	.63	r4.123	.63	.027	.76

[4]Peterson, Joseph, "Intelligence and Learning," *Psychol. Rev.*, Vol. 29, 5, p. 378.

The table shows that predictions of 1, 2, 3, and 4 from the other three in each case are only 6%, 37%, 28%, and 24%, respectively, better than predictions by pure guess. Hence, it is seen that a very high degree of relationship must obtain before reliable individual prediction is secured. In no case does this condition exist here. The error of estimate in predicting M. A., knowing A. A. and R. A., is reduced only 37% from that of a pure-chance prediction; yet the correlation is high. As Kelley points out, the coefficient of correlation must be .86 before the error of estimate is reduced one-half ($k = .50$). Here none of the correlation coefficients is higher than .78.

CONCLUSIONS

The results presented in this study, and the inferences drawn from them, are here regarded as valid only for the grades tested. Moreover, their validity depends upon the assumption that the tests measure what they purport to measure. That there are imperfections in the tests would hardly be denied, even by the authors; but it seems a fair assumption that they test something of the ability or abilities assumed. Data for the validity of the intelligence tests were given above. With these qualifications in mind, we shall now summarize the main facts brought out above.

1. Chronological age shows a perceptible, but low, relationship to arithmetic age, and this relationship is not affected by elements common either to M. A. or to R. A. It was suggested that in arithmetic the content is more definite, and that in school work progress in it is more regular and more closely in agreement with C. A. than with the two other factors.

2. Chronological age shows no correlation with mental age, and only a small, unreliable one with reading age, when the arithmetic age factor is controlled. The lack of correlation with M. A. is probably due to the narrow range of grades tested, since the younger children of a given grade are regularly brighter than the older ones. The fact that the younger, brighter children read more outside the regular school work probably accounts for the lack of correlation between C. A. and R. A.

3. Mental age, as given by the Illinois Scale, correlates rather highly with arithmetic and with reading age; but the correlation with each of the latter seems to depend upon different aspects of the M. A. factor. This conclusion is based upon the fact that controlling either A. A. or R. A., when M. A. is correlated with the other, in each case lowers the correlation only about ten points. Thus, while all three

have common elements, both A. A. and R. A. have in addition elements common to M. A., but not, at the same time, common to each other.

4. The correlation between A. A. and R. A. is due entirely to the factors which both have in common with M. A.

5. Predicting any one of the four factors considered here, knowing the other three, would not be very reliable. The greatest chance of successful prediction comes with M. A., where the chance of successful estimation, when the three other factors are known, is only 37% better than a pure guess. In general, extreme caution should be exercised in predicting a child's performance in a test or school subject on the basis of his record in other tests or subjects. In matters of classification on such a basis much injustice is apt to be done by persons who regard a fairly high correlation as a license for absolute prediction.

6. Assuming that the data here are both reliable and valid, mental age or "intelligence" seems to depend upon a combination of traits or abilities, some of which enter largely into reading and arithmetical calculations. The view that a "common intelligence factor" enters into these various operations receives no support from these correlations. This conception, like the older one of the "faculties," results from too careful attention to logic and too great neglect of biology. The organism is the functional unit, and different organisms are probably predisposed to react more successfully to certain situations than to others. The function of the educator is to differentiate these diverse types of organization and to direct and train each one so that it will operate in society in its particular activities with the least internal conflict, and, consequently, with the greatest consistency and efficiency possible. Careful investigation and mathematical analysis will profitably supplant linguistics in the achievement of this aim.

THE HIGH-SCHOOL SCIENCE LIBRARY FOR 1925

H. A. WEBB
George Peabody College for Teachers

An up-to-date library is one that produces vigorous new growth. To be useful in this busy age, it must keep its shelves supplied with *new* books. The library should be far more than a mere storage place; it serves best as an agent for the introduction of new knowledge into its community, with the minor duty of offering a depository for old knowledge. This is doubly true if the library be one that is constantly used by students; it is trebly true if their interests be in the rapidly changing and expanding fields of *science*.

In many high-school libraries the word *science* has implied the technical, as exemplified in physical or botanical works offering classified, rather than stimulating, knowledge. The stirring volumes that present science in romantic forms have been neglected. For many general readers, and particularly for young people, the latter type is perhaps the more desirable. Science books should be adapted to their readers; each should be, to him likely to peruse it, of the proper style and vigor to fire the imagination and create a literary appetite for more science.

The librarian should have an airplane view of science. He should have the opportunity of looking at the subject with a distant perspective that causes the single, fenced fields to dwindle in apparent size and importance, while the whole spreads out as a boundless vista. As he looks down from a detached height, he gains a true impression of science as a whole; each detail of nature and of man's activity merges into one great unity. He is thrilled by a view so generous in breadth; he detects new relationships that are not apparent from the restricted view had upon the ground.

Of such a breadth is science. Therefore, no matter how large or how small the number of science books to be purchased during a year, the high-school science library should present material from as wide a variety of fields as may be possible. Even strong local interests do not justify too great a specialization in the titles. High-school pupils are not specialists; they will not all remain in one community; they should have contacts through the library with all phases of nature and of human activities built upon science.

The list given in this article is primarily the selection of the publishers themselves. Practically all the American publishers issuing

books in the field of science have permitted us a personal examination of all their science books issued during 1925 which they deemed suitable for popular reading or especially valuable to the youth of high-school age. Our decision as to suitability has, therefore, been made, in each case, with the book in hand and with all its fellows in the same field of science upon the desk.

The classification and arrangement of the titles follows the plan of a previous publication,[1] which, in its original or a reprinted form, has already served some hundreds of libraries in their purchases of science books. To assist libraries with a definite amount to spend, the present list also has been divided into price sections, each group totaling a certain round sum of money in price. There are four of these sections. Ten dollars buys the entire group of books here recommended to a library with only $10 to spend for science; $15 additional completes the $25 list; $25 additional completes the $50 list; $50 and more secures the remainder.

This selection in no sense implies that the books in the larger price list are worthless. Very small differences in treatment or in price must determine the choice when a very few books must be selected out of many. The main task, especially in the smaller lists, has been to avoid duplication of material; only what seemed to us the best book in each large field could be given a favorable place.

It is hoped particularly that this list may advertise to the alert librarian in the high school, or in a public library used largely by high-school pupils, the fact that the science books published during 1925 are both numerous and attractive, and may serve to stimulate larger appropriations by showing the values in interesting and instructive books that may be obtained.

PUBLISHERS AND THEIR ADDRESSES

In the following list, publishers are indicated briefly. The full name and address of each publisher there referred to are here given:

American Museum: American Museum of Natural History, New York City.
American Telephone: American Telephone and Telegraph Co., 195 Broadway, New York City.
Appleton: D. Appleton & Co., 35 West 32d St., New York City.
Arnold: The Arnold Co., 31 South Howard St., Baltimore, Md.
Barnes: A. S. Barnes & Co., 7 West 45th St., New York City.

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[1] "The High-School Science Library," by H. A. Webb. PEABODY JOURNAL OF EDUCATION, Vol. 3, No. 2, 85-119 (September, 1925). A list of approximately one thousand titles of science books published since 1910, suitable for young people or general readers. Classified by subjects and arranged in price groups of $25, $50, $100, $250, $500, $1,000, and over $1,000. Bound reprints of this list are obtainable from the JOURNAL at 25 cents, postpaid.

Barrows: M. Barrows & Co., Huntingdon Chambers, Boston, Mass.
Boni: Boni & Liveright, 61 West 48th St., New York City.
Boy Scouts: Boy Scouts of America, 200 Fifth Ave., New York City.
Century: The Century Co., 353 Fourth Ave., New York City.
Chemical Foundation: The Chemical Foundation, 85 Beaver St., New York City.
Crowell: Thomas Y. Crowell Co., 393 Fourth Ave., New York City.
Drake: Frederick J. Drake & Co., 1006 South Michigan Ave., Chicago, Ill.
Ginn: Ginn & Co., 15 Ashburton Place, Boston, Mass.
Harper: Harper & Brothers, 49 East 33d St., New York City.
Holt: Henry Holt & Co., 19 West 44th St., New York City.
Houghton: Houghton Mifflin Co., 2 Park St., Boston, Mass.
Illuminating Engineering Society, 29 West 39th St., New York City.
Iroquois: Iroquois Publishing Co., University Block, Syracuse, N. Y.
Lea: Lea & Febiger, Washington Square, Philadelphia, Pa.
Lippincott: J. B. Lippincott Co., East Washington Square, Philadelphia, Pa.
Little: Little, Brown & Co., 34 Beacon St., Boston, Mass.
Lothrop: Lothrop, Lee & Shepard Co., 275 Congress St., Boston, Mass.
Lyons: Lyons & Carnahan, 221 East 20th St., Chicago, Ill.
McBride: Robert M. McBride & Co., 7 West 16th St., New York City.
McClurg: A. C. McClurg & Co., 330 East Ohio St., Chicago, Ill.
McKnight: McKnight & McKnight, Normal, Ill.
Macmillan: The Macmillan Co., 64 Fifth Ave., New York City.
Manual Arts: The Manual Arts Press, 237 North Monroe St., Peoria, Ill.
Merrill: Charles E. Merrill Co., 440 Fourth Ave., New York City.
Minton: Minton, Balch & Co., 11 East 45th St., New York City.
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New York Zoo: New York Zoölogical Gardens, New York City.
Rand: Rand, McNally & Co., 538 South Clark St., Chicago, Ill.
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Sanborn: Benjamin H. Sanborn & Co., 50 Beacon St., Boston, Mass.
Saunders: W. B. Saunders Co., West Washington Square, Philadelphia, Pa.
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Texas Co.: The Texas Company, Dallas, Texas.
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Wilde: W. A. Wilde Co., 131 Clarendon St., Boston, Mass.
Wiley: John Wiley & Sons, 432 Fourth Ave., New York City.
Williams: Williams & Wilkins, Mount Royal Ave., Baltimore, Md.
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Why We Behave Like Human Beings. By George A. Dorsey. xviii, 512 pp. Harper ---------- 3.50

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EDITORIALS

RACKING HEARTSTRINGS FOR POLITICAL ADVANTAGE

The PEABODY JOURNAL OF EDUCATION is not in politics. It has no candidates, and fights none. It knows only one issue—the development of the public schools altogether for expert, broad, unselfish public service. But because it stands irrevocably for nonpartisan public schools it must occasionally hit hard those who would debase the schools. The PEABODY JOURNAL has no established position on evolution as such. We would prefer to leave it to specialists. But our interest in it is great when it unhappily becomes a public-school issue.

Thousands of persons in Tennessee are wrought up, are suffering, are dismayed because of agitation over a supposed conflict of evolution with Christian theology. They have been made most unhappy. To some extent they have been led to be distrustful of scholars and of the public schools. The task of many teachers has been made measurably harder. Now, *why?*

The fact has apparently come to light—the statement has, at any rate, been published in the daily papers—that the Tennessee law against the teaching of evolution in the public schools was, in its underlying meaning, merely a strategic move in gubernatorial politics. Think of the unhappiness stirred up incidentally to it! Think of the undermining of confidence in the public schools!

In the first story the law had authorship in a simple-minded, religious, up-country legislator, who thought it out himself and offered it in order to preserve the spiritual integrity of Tennessee youth. On this ground, too, it was supported with tearful earnestness by various orators on the floor of both House and Senate. There was, indeed, even from the first, some slight cause for suspicion. Among the orators were some who have been notable heretofore as shrewd politicians rather than as champions of religion. The fact has now slipped out that the law was composed and typed in the office of one of the most subtle politicians in the state, politically unfriendly to the present governor and now himself an active campaigner for the governorship. The governor, soon to be a candidate for reëlection, was not consulted, but was taken by surprise. In effect, the bill was a trap—intended, as it really did, to put him in a dilemma. Any action he might take would alienate some of his supporters. When the bill had become a law, however, an unexpected complication entered. Quite uninvited, a third gubernatorial aspirant jumped in—a perennial candidate, who promptly became the legal champion in

the Scopes test case which was almost immediately instituted. Three would-be governors! Here was a political issue indeed. The "low down" on the law is that it deliberately stirred a latent popular prejudice, regardless of what damage might result, for purely selfish political purposes.

We have no candidate. Our interest is solely to protect the schools—the huge investment which the commonwealth has toward developing its future citizenship.

Mississippi hands nothing to Tennessee. May Mississippi be heard from next.

KENTUCKY TEACHERS COLLEGES

The state of Kentucky is raising its educational standards conspicuously. Yet how much more progress could be made if purely political and selfish interests could be divorced from the public-school system! Is this altogether too much to expect?

Kentucky has two good teacher-training schools, recently made into teachers colleges. She has also two normal schools, very lately also denominated teachers colleges.

The PEABODY JOURNAL seeks to promote educational interests wisely and economically. Two recent occurrences regarding Kentucky normal schools trouble us. The first is an attempt, defeated in the present legislature, but certain to be made again, to create a number of new normals. In the judgment of the experts in education in the state, the effort is political, not educational. Very possibly, Kentucky needs one more normal; this will altogether suffice, *if it is located by educators, not by politicians.* The measures now up are mere log-rolling. They give sops to localities supporting certain politicians. They would burden financially the educational system of the state without yielding great benefits to the schools.

The second recent occurrence is the appointment to the presidency of one of the normals now established of a prominent politician, who, although able, is without experience or proved capacity as a leader in education. The presidency of a teacher-training school is not, in our judgment, a suitable reward for political service. In this case, we hope for the best. We *hope*—but our good judgment says "No" to the expectation—that teacher training conducted under such auspices will prove to be an economical, high-grade contribution to the Kentucky public-school system.

THE NEW BOOKS ON OUR SHELF

An Art Outline for Grade Teachers. Compiled by American Art Aid (Stanford University, California). Pp. 34. Free.

An interesting detailed curriculum for eight grades. Gratis to teachers.

The Third Great Plague. By JOHN H. STOKES (University of Minnesota). Philadelphia: W. B. Saunders Co., 1920. Pp. 204.

An exposition and discussion of *syphilis*, by an able specialist of the famous Mayo Clinic, Rochester, Minn., "for everyday people." Teachers should know the information it gives.

Introduction to Rural Economics. By PAUL L. VOGT. New York: D. Appleton & Co., 1925. Pp. xii + 377.

A well-written book on the fundamental problems of rural economic life. It follows the usual outline and takes up the topics common to the subject. Illustrated, and with questions and references. A good textbook for rural high schools. O. C. A.

The Smedley and Olsen First Reader. By EVA A. SMEDLEY and MARTHA C. OLSEN. Chicago: Hall and McCreary Co., 1925. Pp. 192. Price, $0.64.

A well-illustrated, well-bound, story-type first reader. The selections are of genuine interest. One would think that all the kitty, puppy, cow, chicken, and mouse stories had been told; but here are some fresh, new ones.

A Study of Child-Accounting Records. By ARCH O. HECK. Ohio State University Studies; Bureau of Educational Research Monographs, No. 2. Columbus, Ohio, 1925. Pp. xvi + 245. Price, $1.50.

A commendably thorough and complete study of child-accounting records, covering their justification and the requirements of uniformity in procedure and in items to be listed, and giving complete data in support of the resulting select list of child-accounting record items which is recommended. The report seems to be indispensable to school authorities who keep records of school children.

An Introduction to the Study of Education. By ELLWOOD P. CUBBERLEY (Stanford University). Cambridge, Mass.: Houghton Mifflin Co., 1925. Pp. xix + 476.

A very general survey noticing all the topics in the extensive field of education. Only a very brief résumé of each topic. Professor Cubberley, either consciously or unconsciously, has attempted an outline of education somewhat comparable to the outlines of history, science, and literature which have in recent years been published. The book is probably worth more to the layman who is interested in surveying the subject of education than it is as a formal textbook for students. The volume is easy to read. The author continues to write in the same interesting style which pervades his other books. H. L. D.

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Burton Holmes Travel Stories of Egypt and the Suez Canal. By SUSAN WILBUR. Edited by WILLIAM H. WHEELER and BURTON HOLMES. Chicago: Wheeler Publishing Co., 1925. Pp. vi + 404. Price, $1.28. Manual free.

These are two books in a large series of supplementary readers. The most attractive feature of the books is their wealth of illustrations. The pictures are well chosen and well reproduced. The books are hardly to be classed as geography readers, but as stories of travel, closely associated with geography. A. E. P.

Physiography. By DOUGLAS C. RIDGLEY (Clark University) and MABEL P. CROMPTON (Illinois State Normal University). Normal, Ill.: McKnight & McKnight, 1925. Pp. 96.

The Branom Practice Tests in Geography. By MENDEL E. BRANOM (Harris Teachers College, St. Louis). New York: The Macmillan Co., 1925. Pp. 225.

This practice pad consists of 177 practice lessons in geography suitable for the upper elementary grades and the junior high-school classes. These lessons take the form of true-false tests, association tests, multiple choice tests, completion tests, problem tests, and map work. They are so arranged that they call for the minimum of writing on the part of the pupil and are easily checked by the teacher. The pad could well be used to supplement textbook work. L. F.

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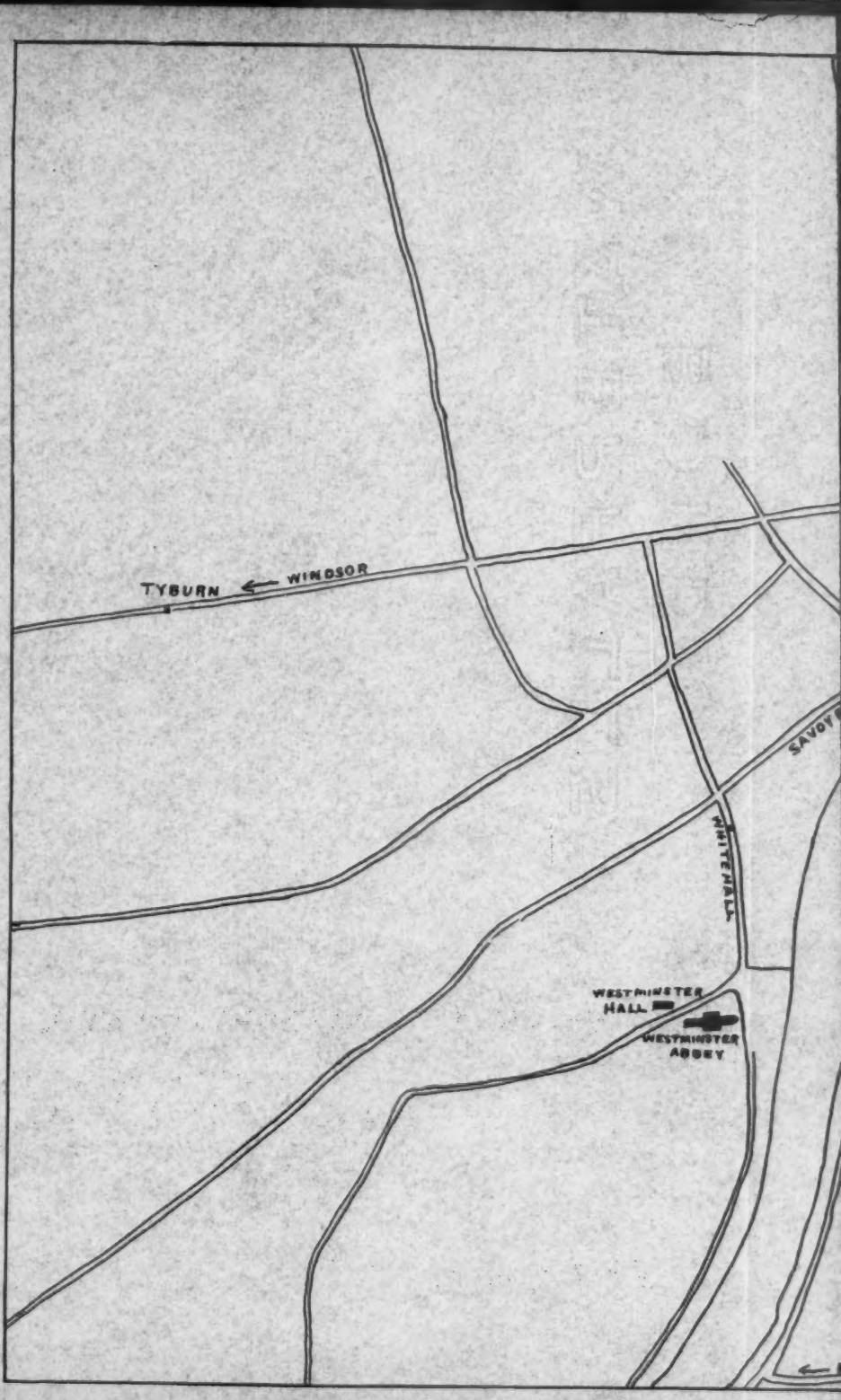
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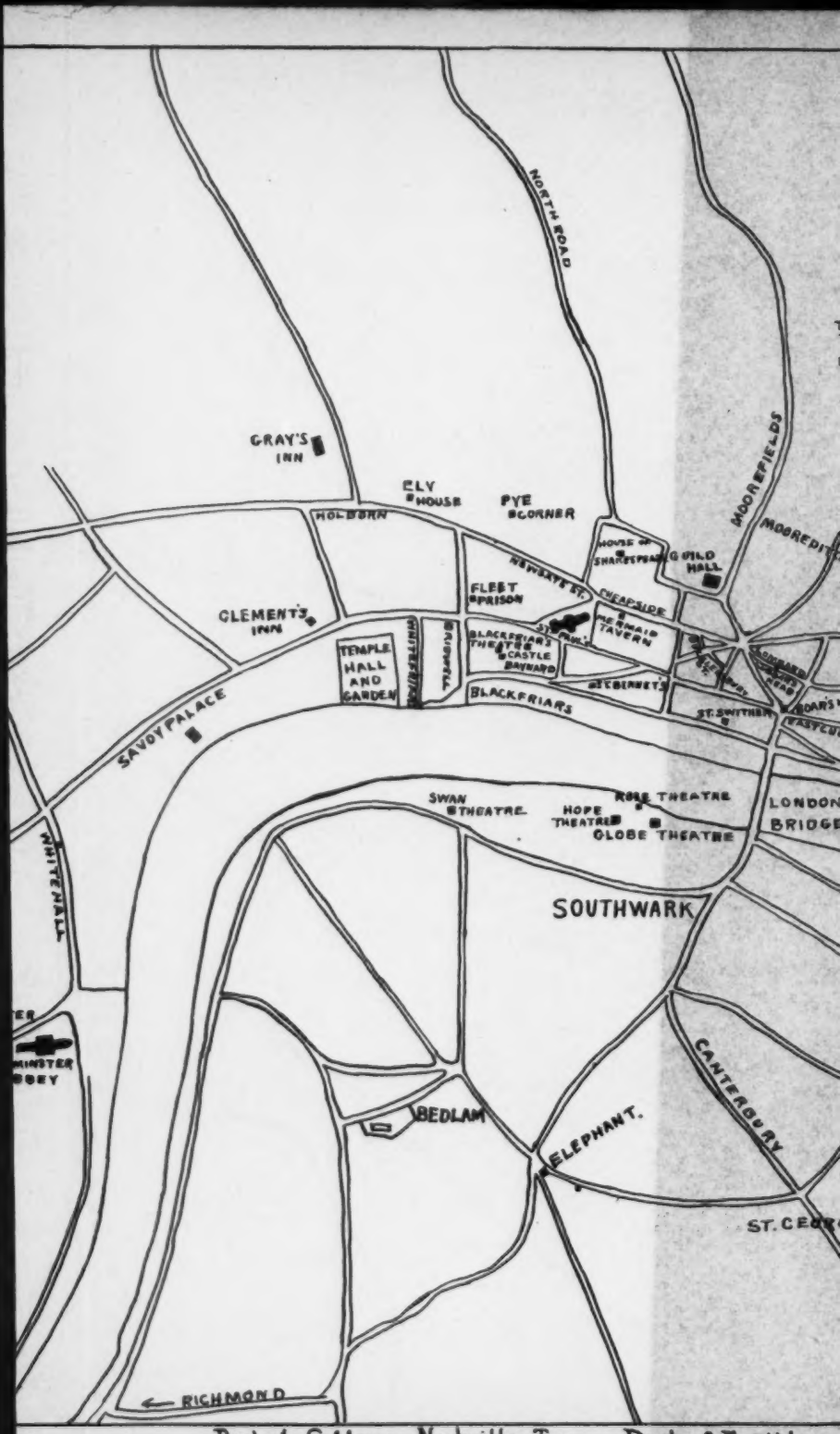
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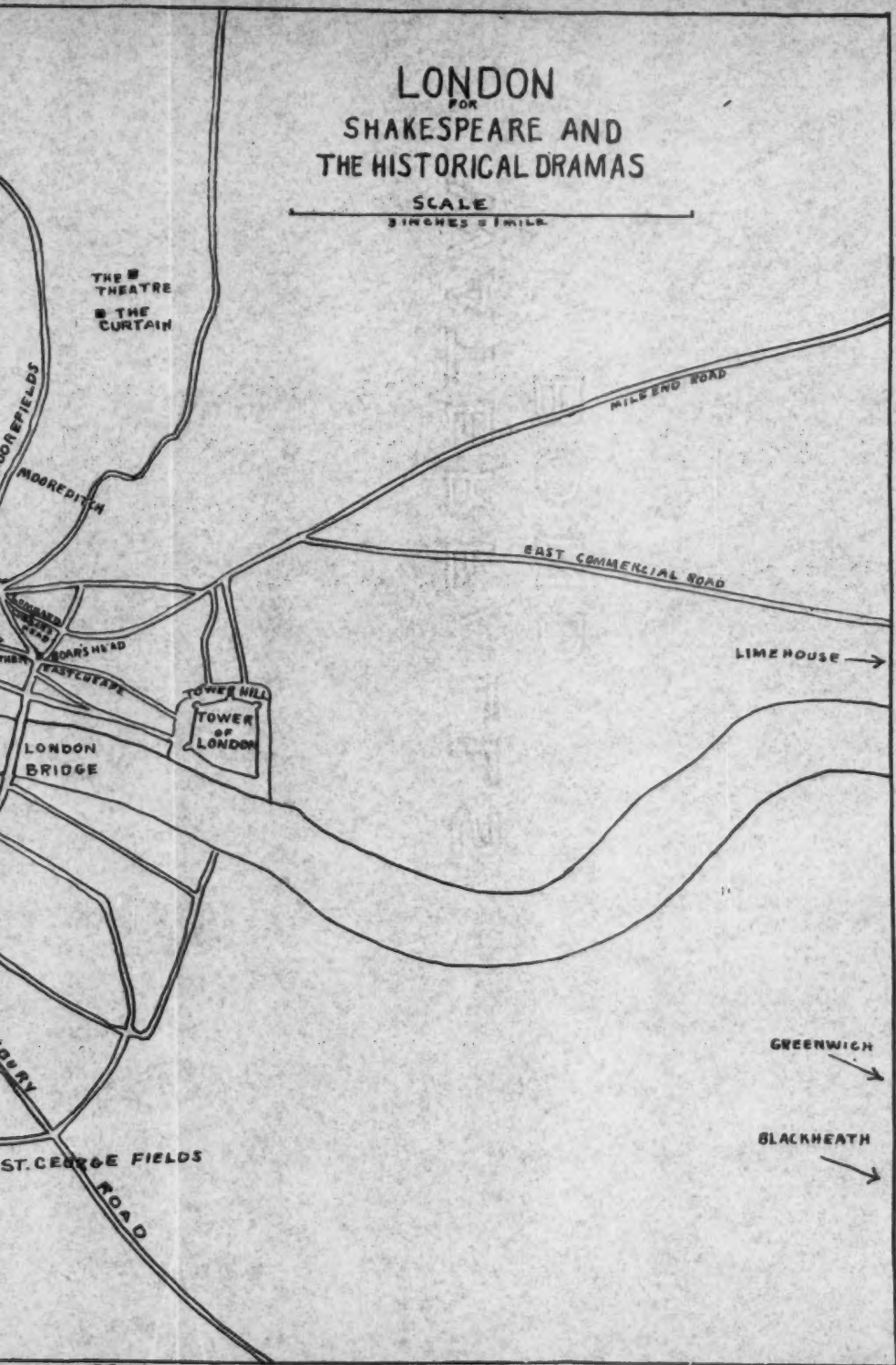

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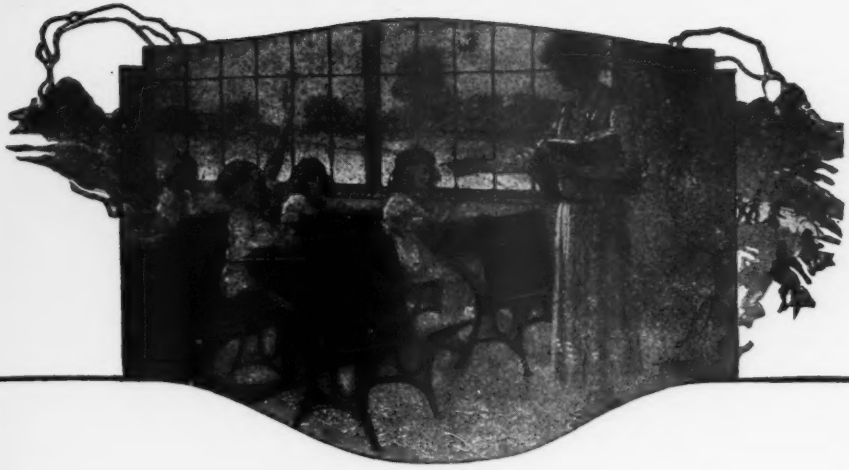

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The Climates of the United States. By ROBERT DE COURCY WARD (Harvard University). Boston: Ginn & Co., 1925. Pp. xvi + 518. Price, $4.

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Health for Every Day. By MAURICE A. BIGELOW and JEAN BROADHURST (Teachers College, New York). Newark: Silver, Burdett & Co., 1924. Pp. vii + 247.

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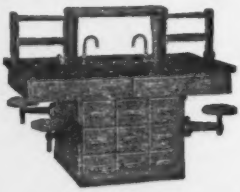

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